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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/302,397      | 04/30/1999  | KAZUNORI OZAWA       | SON-0432            | 6830             |

7590                  04/02/2002

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[REDACTED] EXAMINER

ARMSTRONG, ANGELA A

[REDACTED] ART UNIT    [REDACTED] PAPER NUMBER

2654

DATE MAILED: 04/02/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                       |
|------------------------------|------------------------|-----------------------|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b>   |
|                              | 09/302,397             | OZAWA, KAZUNORI<br>88 |
|                              | <b>Examiner</b>        | <b>Art Unit</b>       |
|                              | Angela A. Armstrong    | 2654                  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 09 January 2002.
- 2a) This action is FINAL.                  2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-11 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION*****Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-11 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claims 1-11, as argued by applicant, include subject matter for processing pulses by using different pulse-shifting schemes depending upon whether a voice sound mode or unvoiced sound mode is discriminated. Applicant has argued "Either way, a time-shifting scheme is employed".

3. Contrary to applicant's argument, the specification does not support a time shift of both voiced and unvoiced sound modes. Referring to the specification, page 29, lines 14-19, the time shift amount is indicated by  $\delta(j)$ . The time shift amount is indicated in the equations for minimizing distortions of unvoiced signal, as illustrated in equations 15, 17, 19, and 21. However, the shift amount is not indicated in the equations for minimizing distortions in the voiced mode, as illustrated in equations 11, 16, and 18.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kleijn et al (US Patent No. 5,704,003) in view of Swaminathan et al (US Patent No. 5,751,903) and Gershon et al (US Patent No. 5,657,418).

6. Regarding claims 1-11, Kleijn et al teaches,

Spectrum parameter calculation section for receiving a speech signal, obtaining a spectrum parameter, and quantizing the spectrum parameter at col. 5, lines 66-67 and col. 6, lines 1-3;

Adaptive codebook section for obtaining a delay and a gain and obtaining a residual by predicting a speech signal at col. 6, lines 52-62;

Discrimination section for discriminating a voiced/unvoiced mode at col. 7 lines 10-26 and col. 5, lines 7-8;

Kleijn et al do not specifically teach that the discriminating a voiced/unvoiced mode is based on a past quantized gain of an adaptive codebook. Refer to Gershon et al who disclose a speech coder with the provision of gain information using multiple coding

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modes (col. 5, line 66 continuing to col. 6, line 13) and teaches that the lag parameter which reflects the periodicity, is used to select a particular coding mode (col. 4, lines 16-19; 40-45; 48-53; col. 2, lines 28-31). Gershon et al teach that the system is useful in reducing speech coder data rates and maintaining or improving good speech quality (col. 2, lines 7-11)

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the coding system of Kleijn et al to implement discriminating a voiced/unvoiced mode is based on a past quantized gain, as taught by Gershon et al, for the purpose of reducing speech coder data rates and maintaining or improving good speech quality, as suggested by Gershon et al.

Kleijn et al further teach, sound source quantization which has a codebook for representing a signal by combination of pulses and amplitudes and searches code vectors stored in the codebook and delays or shift amounts so as to output a combination of code vector and shift amount that minimizes distortion at col. 6, lines 21-61.

Kleijn does not specifically teach a multiplexer for the coder or a decoder scheme with a demultiplexer and sound source reconstruction. However, refer to Swaminathan et al who teaches a multi-mode CELP codec apparatus which implements a mode determining section, pulse codebooks, codebook searching and gain quantization, multiplexing spectrum parameters, codebook and quantization outputs for transmission to a decoder, a decoder which demultiplexes the transmitted spectrum parameters, codebook and quantization outputs, determines modes, and reconstructs the sound source signal via

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synthesis (col. 5, lines 8-39), for the purpose of providing high-quality speech coding and decoding.

Therefore, it would have been obvious to one of ordinary skill at the time of invention to implement a multiplexer and a decoding scheme with the system of Kleijn et al for the purpose of providing high quality speech coding and decoding as suggested by Swaminathan et al.

***Response to Arguments***

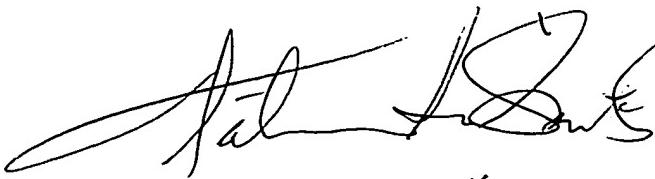
7. Applicant's arguments with respect to claims 1-11 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela A. Armstrong whose telephone number is 703-308-6258. The examiner can normally be reached on Monday-Thursday 7:30-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on (703) 305-4379. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

AAA  
March 25, 2002



TALIVALDIS MARS SMITS  
PRIMARY EXAMINER